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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,684	05/24/2001	Pierre Brunelot	24648	3103
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NATH & ASSOCIATES 1030 15th STREET 6TH FLOOR WASHINGTON, DC 20005				
			EXAMINER LISH, PETER J	
			ART UNIT 1754	PAPER NUMBER

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/856,684

Applicant(s)

BRUNELOT ET AL.

Examiner

Peter J Lish

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8, 16 and 17 is/are allowed.
- 6) ☒ Claim(s) 9-12, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's arguments filed 10/20/03 with respect to the rejections under the reference to Floyd '626 have been fully considered but they are not persuasive. Applicant argues that the Floyd patent is silent on whether clogging of the oxygen lances occurs upon cessation of injection (at which time there no oxygen flow). Examiner addressed this issue, stating that it appears that the combination of cooling system and the lance top-submerged into the bath would be sufficient to prevent plug formation in the lance delivering oxygen beneath the surface of the bath. Where, as here, the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, the burden of proof is shifted to the applicant, as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

Additionally, applicant argues that the Floyd patent nowhere discloses that the injection lances are introduced into the bottom portion of the reactor beneath the surface of the bath of molten glass as claimed in claim 10. However, it is viewed that the injection means, namely the lance end from which the oxygen is injected, is introduced beneath the surface of the molten bath, which is considered the bottom portion of the reactor. No difference is seen between the injection system of Floyd and the injection system claimed in claim 10.

Applicant's arguments, filed 10/20/03, with respect to the rejections under the reference to Kiss '722 have been fully considered and are persuasive. The rejections have been withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9, 10, 12, and 14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Floyd '626.

Column 2, line 65 to column 3, line 10 teaches charging waste to a reactor system having a molten slag bath at the bottom. An oxygen-providing lance penetrates into the molten bath to provide oxygen. Column 9, lines 10-60 teach the lance has multiple annuli. One annulus extends all the way down into the bath. The other extends only to the gas phase. Each of these annuli provides oxygen needed for treatment and combustion. In between these annuli is another space where cooling fluid circulates to control the temperature of both annuli. Column 3, lines 63-66 teach a water or steam-cooled heat exchanger placed around the reactor.

It is not explicitly taught that the lance delivering oxygen beneath the surface of the molten bath is arranged in such a manner that on the cessation of the oxygen flow, the injection means do not form a plug of glass at their open end. However, it is expected that this be the case, as it appears that the combination of cooling system and the lance top-submerged into the

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bath would be sufficient to prevent plug formation in the lance delivering oxygen beneath the surface of the bath.

Claims 9-10 and 15 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shaw et al. (US 5,678,244).

In figure 1, Shaw teaches an apparatus comprising a reactor associated with means suitable for maintaining a bath of molten material, specifically through induction heating. The reactor additionally comprises a means for emptying the molten bath (48), a feeding device for feeding waste opening above a surface of the molten bath (46 or the pipe extending from 26 through 47), means for feeding oxygen gas above the surface of the molten bath (39), a combustion outlet well above the surface of the molten bath (18), and a means of injecting oxygen beneath the surface of the molten bath (34), having a structure which includes a circuit for circulating a cooling fluid therein (40).

It is not explicitly taught that the injection means delivering oxygen beneath the surface of the molten bath is arranged in such a manner that on the cessation of the oxygen flow, the injection means do not form a plug of glass at their open end. However, it is expected that this be the case, as no difference is seen between the injection means of Shaw et al. and that of the instantly claimed invention.

Regarding claim 15, it is not explicitly taught that the reactor is a cold crucible, however, it is expected that this be the case, because the heating of the molten batch is performed through induction heating.

***Claim Rejections - 35 USC § 103***

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw et al.

Shaw et al. is applied above. Shaw does not explicitly teach that the mean for injecting oxygen below the surface of the molten bath pass vertically through the bottom portion of the reactor and present a horizontal outlet. The introduction means of Shaw present a horizontal outlet, however, the pipe connected to the injection means passes horizontally through the bottom portion of the reactor. It would have been obvious to one of ordinary skill at the time of invention to modify the piping connected to the injection means of Shaw et al., as doing so is viewed to be a rearrangement of the location of parts, which will have no effect on the performance of the apparatus itself and is held to be obvious by *In re Japikse*, 86 USPQ 70.

***Allowable Subject Matter***

Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1-8 and 16-17 are allowed. It is the interpretation of the examiner that the oxygen is injected through the open end of the injection means, the open end of the injection means being disposed in contact with the molten bath and the claims are considered limited as such.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



PL

STUART L. HENDRICKSON  
PRIMARY EXAMINER